

**COMMONWEALTH OF KENTUCKY**

**BEFORE THE PUBLIC SERVICE COMMISSION**

**IN THE MATTER OF:**

**AN ADJUSTMENT OF THE ELECTRIC  
RATES, TERMS, AND CONDITIONS OF  
KENTUCKY UTILITIES COMPANY**

)  
)  
)

**CASE NO.  
2003-00434**



**DIRECT TESTIMONY  
AND EXHIBITS  
OF  
RICHARD A. BAUDINO**

**ON BEHALF OF THE  
KENTUCKY INDUSTRIAL UTILITY CUSTOMERS, INC.**

**J. KENNEDY AND ASSOCIATES, INC.  
ROSWELL, GEORGIA**

**MARCH 2004**

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**DIRECT TESTIMONY OF RICHARD A. BAUDINO**

**I. QUALIFICATIONS AND SUMMARY**

1

2 **Q. Please state your name and business address.**

3

4 A. Richard A. Baudino, J. Kennedy and Associates, Inc. ("Kennedy and Associates"),  
5 570 Colonial Park Drive, Suite 305, Roswell, Georgia 30075.

6

7 **Q. What is your occupation and who employs you?**

8

9 A. I am a utility rate and economic consultant holding the position of Director of  
10 Consulting with the firm of Kennedy and Associates.

11

12 **Q. Please describe your education and professional background.**

13

14 A. I received my Master of Arts degree with a major in Economics and a minor in  
15 Statistics from New Mexico State University in 1982. I also received my Bachelor

*J. Kennedy and Associates, Inc.*

1 of Arts degree with majors in Economics and English from New Mexico State in  
2 1979.

3

4 I began my professional career with the New Mexico Public Service Commission  
5 Staff in October of 1982 and was employed there as a Utility Economist. During my  
6 employment with the Staff, my responsibilities included the analysis of a broad  
7 range of issues in the ratemaking field. Areas in which I testified included cost of  
8 service, rate of return, rate design, revenue requirements, analysis of sale/leasebacks  
9 of generating plants, utility finance issues, and generating plant phase-ins.

10

11 In October 1989 I joined the utility consulting firm of Kennedy and Associates as a  
12 Senior Consultant where my duties and responsibilities covered substantially the  
13 same areas as those during my tenure with the New Mexico Public Service  
14 Commission Staff. I became Manager in July 1992 and was named to my current  
15 position in January 1995.

16

17 Exhibit \_\_ (RAB-1) summarizes my expert testimony experience.

18

19 **Q. On whose behalf are you testifying in this proceeding?**

20

21 A. I am testifying of behalf of the Kentucky Industrial Utility Customers, Inc.  
22 (“KIUC”).

23

24 **Q. What issues will you be addressing in this piece of your Direct Testimony?**

25

1 A. I will offer testimony on the allowed return on equity for the electric operations of  
2 Kentucky Utilities (“KU” or “Company”).  
3

4 **Q. Please summarize your conclusions and recommendations with respect to**  
5 **EGSI's return on equity.**

6  
7 A. I recommend that the Kentucky Public Service Commission (“KPSC” or  
8 “Commission”) authorize a return on equity of 8.70% for KU’s retail electric  
9 operations.  
10

11 I also reviewed the Testimony of LG&E witness Robert Rosenberg. Mr. Rosenberg  
12 recommended a cost of equity of 11.25% for KU’s electric operations. This  
13 recommendation is excessive and overstates the investors’ required return on equity  
14 for KU.. I recommend that the Commission reject Mr. Rosenberg’s return on equity  
15 recommendation.  
16

17 **Q. How is the rest of your direct testimony organized?**  
18

19 A. The rest of my testimony is organized into the following subsections:  
20

21 II. REVIEW OF ECONOMIC AND FINANCIAL CONDITIONS

22 III. DETERMINATION OF FAIR RATE OF RETURN

23 IV. RESPONSE TO LG&E WITNESS ROBERT ROSENBERG  
24

1           **II. REVIEW OF ECONOMIC AND FINANCIAL CONDITIONS**

2  
3   **Q.   Please describe the general economic trends that have affected utilities in the**  
4   **last few years.**

5  
6   A.   The trend for the stock and bond markets was quite positive through the '90s.  
7        Although there was a recession in late 1990 through early 1991, the markets  
8        continued to post strong, above average gains through 1999. During the period from  
9        1990 - 1999, the S&P 500 posted an average annual gain of 18.2%, still well above  
10       the long-term average stock market return of 12.2%<sup>1</sup>. Long-term government bonds  
11       also provided excellent returns during the '90s, averaging 8.8% per year compared  
12       to the long-run average of 5.8%. During the 1990s, inflation remained moderate,  
13       averaging 2.9%.

14  
15       In 2000, the stock and bond markets substantially diverged. The total return for the  
16       S&P 500 was -9.11%, while the return for small company stocks was -3.59%.  
17       Bonds prices, however, staged a strong rally despite two interest rate increases by  
18       the Federal Reserve. The total return for long-term government bonds for the year  
19       was 21.48%, with the yield falling from 6.82% at the end of 1999 to 5.58% at the  
20       end of December 2000. The inflation rate rose to 3.39% for the year.

21  
22       During 2001, the economy slowed considerably and was affected drastically by the  
23       terrorist attacks of September 11. The unemployment rate rose to 5.8% and GDP  
24       growth slowed to only 1.1% for the year. Stock and bond markets again showed

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<sup>1</sup> *Stocks, Bonds Bills, and Inflation 2003 Yearbook*, Ibbotson Associates, pages 18 and 112.

1 divergent returns. The Standard and Poor's 500 returned -11.88% for the year,  
2 while small company stocks actually did quite well, posting a total return of 22.77%.  
3 Long-term government bonds returned 3.70% during 2001.

4  
5 For 2002, Ibbotson Associates reported that the unemployment rate rose to 6.0% and  
6 GDP grew at an inflation-adjusted rate of 2.4%. This compares the 0.3% growth  
7 rate for GDP in 2001. The S&P 500 returned -22.10% for the year, the third straight  
8 yearly loss for large-company stocks. However, long-term government bond  
9 returned 17.84%, well above the long-run average yearly return.

10  
11 2003 was a much better year for the stock market in general as the U.S. economy  
12 staged a recovery. According to the Value Line Investment Survey's *Selection and*  
13 *Opinion*, January 9, 2004, the S&P 500 rose 26.2% during the year. Interest rates  
14 remained low, with the Prime Rate at 4.0%, the discount rate at 2.0%, and the  
15 Federal Funds rate at 1.0%. The Bureau of Labor Statistics reported that the U.S.  
16 unemployment rate stood at 5.7% at the end of December 2003, a decline from  
17 2002. The inflation rate remained low at 2.0% for the year. Utility stocks also did  
18 well during 2003, with prices staging a significant rally during the year. The Dow  
19 Jones Utility Average began the year at 215.16 and closed the year at 266.9, an  
20 increase of 24%.

21  
22 **Q. What has the trend in capital costs been over the last few years?**

23  
24 A. Exhibit \_\_\_\_ (RAB-2) presents a graphic depiction of the trend in interest rates from  
25 January 1994 through January 2004. The interest rates shown are for the 20-year

1 U.S. Treasury Bond and the average public utility bond from the Mergent Bond  
2 Record. Exhibit \_\_\_\_ (RAB-2) shows that the yields on long-term treasury bonds  
3 have declined significantly since early 1995, although rates have been quite volatile.  
4 Increased bond market volatility actually began in the early 1970s, when inflation  
5 became more of a sustained long-term concern. Interest rate volatility remains  
6 higher now than it has been historically.

7  
8 Yields have trended downward from 2002 through 2004, with the 20-year bond  
9 yield ending the month of February 2004 at 4.94%. The yield on the average public  
10 utility bond has also decreased significantly in 2002 and 2003, falling from 7.83% in  
11 March 2002 to 6.23% in January 2004. As of March 11, the Moody's average  
12 public utility bond yield stood at 5.95%. A-rated utility bonds yielded 5.91%, while  
13 Baa bonds yielded 6.01%.

14  
15 Over the last six months, bonds have reached their lowest levels in recent history.  
16 Exhibit \_\_\_\_ (RAB-2) shows that since 1994 public utility bond yields are at their  
17 lowest level over that ten-year historical period. I also reviewed the Mergent *Public*  
18 *Utility Manual* and found that average public utility bond yields have not been as  
19 low as they are now since the 1968 – 1969 time period, almost 35 years ago.

20  
21 **Q. Mr. Baudino, in your opinion what effect does the current interest rate**  
22 **environment have on utility stocks?**

23  
24 A. In my view, the currently low bond yields strongly suggest lower return on equity  
25 requirements on the part on the investing public. The results of my return on equity

1 analysis in the subsequent section of my Direct Testimony are consistent with these  
2 historically low bond yields.

3

4 **Q. How does the investment community regard the electric utility industry as a**  
5 **whole?**

6

7 A. The Value Line Investment Survey reported the following in its March 5, 2004  
8 report on the electric utility industry (east):

9

10 **“The bankruptcy of Enron and the California energy crisis prompted a**  
11 **majority of utilities to adopt a “back-to-basics” strategy in recent years.**  
12 ***Duquesne Light Holdings* is one noteworthy example. This means that**  
13 **most power companies are once again largely reliant on traditional**  
14 **distribution businesses for net-profit growth. Nearly half of all the**  
15 **states in the U.S. have adopted some form of retail open-market rules**  
16 **since deregulation began in the mid-1990s. Nevertheless, many more**  
17 **years will likely pass before the rest of the country completely embraces**  
18 **retail competition.”**

19

20 Value Line also noted that most electric utilities have stepped back from risky  
21 financial energy trading ventures, enhancing future earnings predictability. Net  
22 profit prospects for the industry through 2007 are generally favorable, but growth  
23 prospects will not be exceptional, according to Value Line’s report.

24

25 **Q. What is your view of Value Line’s comments regarding the state of the electric**  
26 **industry today?**

27

1 A. In my opinion, Value Line's comments indicate that utilities have ventured into  
2 higher risk unregulated operations that can increase risk and, in certain cases, harm  
3 their overall financial performance. These unregulated operations have increased  
4 risk for electric utilities. Now that many utilities have backed away from such  
5 ventures, their overall risk should decline and their financial situations should  
6 stabilize. Further, I believe that utility stocks have become much more attractive to  
7 investors over the last 12 to 15 months. Much of the uncertainty brought about by  
8 the California energy crisis and the Enron debacle has subsided, reducing the  
9 perceived risk of utility companies in general.

10

11 Further, as the previously cited Value Line report noted, many states have retreated  
12 from deregulation and restructuring. Since Kentucky Utilities is located in a state  
13 that follows the traditional regulatory model and which does not have any  
14 deregulation or restructuring activities, the Company is lower risk than utilities  
15 located in states that operate under some form of deregulation and/or competition.

16

17 **Q. What is KU's current bond rating?**

18

19 A. KU is currently rated A by Standard and Poor's and A1 by Moody's. These ratings  
20 are generally in the middle of S&P's and Moody's investment grade ratings.

21

22 In its report on KU dated August 5, 2003, S&P noted the following:

23

24 **"KU's above-average business profile is supported by low production**  
25 **costs, lack of nuclear-generating assets, and a favorable regulatory**  
26 **environment. The Company's electric operations benefit from**  
27 **environmental cost recovery and cost of fuel adjustment mechanisms.**  
28 **These mechanisms reduce exposure to environmental legislation, and**

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2  
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4  
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7

**potential volatility in natural gas prices, both of which normally concern Standard & Poor's."**

S&P currently assigns a business risk profile of 4 to KU. This ranking system runs from 1 (lowest risk) to 10 (highest risk). Thus, KU's 4 rating places it in the lower risk category.

**III. DETERMINATION OF FAIR RATE OF RETURN**

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25

**Q. Please describe the methods you employed in estimating a fair rate of return for KU.**

A. I employed a Discounted Cash Flow ("DCF") analysis for a group of comparison electric companies to estimate the cost of equity for the Company's electric operations. I also employed a Capital Asset Pricing Model ("CAPM") analysis, although I did not incorporate its results into my recommendation.

**Q. What are the main guidelines to which you adhere in estimating the cost of equity for a firm?**

A. Generally speaking, the estimated cost of equity should be comparable to the returns of other firms with similar risk structures and should be sufficient for the firm to attract capital. These are the basic standards set out in Federal Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1944) and Bluefield W.W. & Improv. Co. v. Public Service Comm'n., 262 U.S. 679 (1922).

From an economist's perspective, the notion of "opportunity cost" plays a vital role in estimating the cost of equity. One measures the opportunity cost of an investment equal to what one would have obtained in the next best alternative. For example, let us suppose that an investor decides to purchase the stock of a publicly traded electric utility. That investor made the decision based on the expectation of dividend payments and perhaps some appreciation in the stock's value over time. However,

1 that investor's opportunity cost is measured by what she or he could have invested in  
2 as the next best alternative. That alternative could have been another utility stock, a  
3 utility bond, a mutual fund, a money market fund, or any other number of  
4 investment vehicles.

5  
6 The key determinant in deciding whether to invest, however, is based on  
7 comparative levels of risk. Our hypothetical investor would not invest in a particular  
8 electric company stock if it offered a return lower than other investments of similar  
9 risk. The opportunity cost simply would not justify such an investment. Thus, the  
10 task for the rate of return analyst is to estimate a return that is equal to the return  
11 being offered by other risk-comparable firms. Failing this, the subject firm will be  
12 impaired in its ability to attract capital.

13  
14 **Q. What are the major types of risk faced by utility companies?**

15  
16 **A.** In general, risk associated with the holding of common stock can be separated into  
17 three major categories: business risk, financial risk, and liquidity risk. Business risk  
18 refers to risks inherent in the operation of the business. Volatility of the firm's sales,  
19 long-term demand for its product(s), the amount of operating leverage, and quality  
20 of management are all factors that affect business risk. The quality of regulation at  
21 the state and federal levels also plays an important role in business risk for regulated  
22 utility companies.

23  
24 Financial risk refers to the impact on a firm's future cash flows from the use of debt  
25 in the capital structure. Interest payments to bondholders represent a prior call on

1 the firm's cash flows and must be met before income is available to the common  
2 shareholders. Additional debt means additional variability in the firm's earnings,  
3 leading to additional risk.

4  
5 Liquidity risk refers to the ability of an investor to quickly sell an investment without  
6 a substantial price concession. The easier it is for an investor to sell an investment  
7 for cash, the lower the liquidity risk will be. Stock markets, such as the New York  
8 and American Stock Exchanges, help ease liquidity risk substantially. Investors who  
9 own stocks that are traded in these markets know on a daily basis what the market  
10 prices of their investments are and that they can sell these investments fairly quickly.  
11 Many electric utility stocks are traded on the New York Stock Exchange and are  
12 considered liquid investments.

13  
14 **Q. Are there any indices available to investors that quantify the total risk of a**  
15 **company?**

16  
17 **A.** Yes. Published measures exist that categorize companies based on various measures  
18 of risk. One of the best-known and most widely available sources is from Value  
19 Line. Each company on which Value Line reports is assigned a Safety Rank. The  
20 Safety Rank consists of a number from 1 to 5, with 1 being the highest - meaning  
21 least risky - and 5 being the lowest - meaning most risky. The Safety Rank  
22 measures the total risk of a stock and encompasses just about all factors that affect  
23 financial and business risk. These factors include:

- 24  
25 • Stock price volatility  
26 • Fixed charge coverage ratio  
27 • Quality of earnings

- 1           •     Capitalization ratio
- 2           •     Earnings on common stock
- 3           •     Payout ratio
- 4           •     Regulatory risk

5

6           By selecting companies with the same Safety Rank, investors can be relatively  
7           confident that the market views them as similarly risky investments.

8

9           Bond ratings are another good tool that investors may utilize to determine the risk  
10          comparability of firms. Bond rating agencies such as Moody's and Standard and  
11          Poor's perform detailed analyses of all the factors that contribute to the business and  
12          financial risk of a particular investment. The end result of their analyses is a bond  
13          rating that reflects these risks.

14

15    **Discounted Cash Flow Method**

16

17    **Q.     Please describe the basic DCF approach.**

18

19    A.     The basic DCF approach is rooted in valuation theory. It is based on the premise  
20          that the value of a financial asset is determined by its ability to generate future net  
21          cash flows. In the case of a common stock, those future cash flows take the form  
22          of dividends and appreciation in price. The value of the stock to investors is the  
23          discounted present value of future cash flows. The general equation then is:

1 
$$V = \frac{R}{(1+r)} + \frac{R}{(1+r)^2} + \frac{R}{(1+r)^3} + \dots + \frac{R}{(1+r)^n}$$

2 *Where:*  $V =$  asset value  
3  $R =$  yearly cash flows  
4  $r =$  discount rate  
5

6 This is no different from determining the value of any asset from an economic  
7 point of view. However, the DCF model that I employ does make certain  
8 simplifying assumptions. One is that the stream of income from the equity share  
9 is assumed to be perpetual; that is, there is no salvage or residual value at the end  
10 of some maturity date (as is the case with a bond). Another important assumption  
11 is that financial markets are efficient; that is, they correctly evaluate the cash  
12 flows relative to the appropriate discount rate, thus rendering the stock price  
13 efficient relative to other alternatives. Finally, the model I employ also assumes a  
14 constant growth rate in dividends. The fundamental relationship employed in the  
15 DCF method is described by the formula:

16  
17 
$$k = \frac{D_1}{P_0} + g$$

18 *Where:*  $D_1 =$  the next period dividend  
19  $P_0 =$  current stock price  
20  $g =$  expected growth rate  
21  $k =$  investor-required return  
22

23 It is apparent that the "k" so determined must relate to the investors' expected  
24 return. Use of the discounted cash flow method to determine an investor-required  
25 return is complicated by the need to express investors' expectations relative to

1 dividends, earnings, and book value over an infinite time horizon. Financial  
2 theory suggests that stockholders purchase common stock on the assumption that  
3 there will be some change in the rate of dividend payments over time. We assume  
4 that the rate of growth in dividends is constant over the assumed time horizon, but  
5 the model could easily handle varying growth rates if we knew what they were.  
6 Finally, the relevant time frame is prospective rather than retrospective.

7

8 **Q. What was your first step in conducting your DCF analysis for KU's electric**  
9 **operations?**

10

11 A. My practice is to first construct a comparison group of companies that has a risk  
12 profile that is reasonably similar to that of KU. This is necessary because KU is  
13 an operating subsidiary of E.ON AG and, as such, does not have publicly traded  
14 common stock. Thus, a DCF analysis cannot be performed directly on KU.

15

16 **Q. Please describe your criteria for selecting the comparison group of electric**  
17 **companies.**

18

19 A. I normally use several criteria to select a comparison group. These criteria include:

20

- 21 • Comparable bond ratings
- 22 • 50% of revenues from electric operations
- 23 • Exclusion of utilities involved in merger activity

- 1           • Exclusion of utilities that have recently cut dividends  
2           • Exclusion of utilities that have significantly fluctuating or erratic earnings  
3

4           In this proceeding, I reviewed KU witness Rosenberg's electric utility group and  
5           found it to be a reasonable one to use to estimate the cost of equity for LG&E. Mr.  
6           Rosenberg used similar criteria to select his group, which included the following:

- 7  
8           • Bond ratings of AA/A or Aa/A from Standard and Poor's and Moody's  
9           • Exclusion of utilities involved in merger activity  
10          • Exclusion of utilities with significant unregulated operations  
11          • Exclusion of utilities not paying a dividend or for which a dividend cut was  
12           forecast by Value Line.

13  
14          These criteria are generally reasonable, although they are not identical to the criteria  
15          I use in constructing a comparison group. However, for purposes of this proceeding  
16          I will use the group of companies that Mr. Rosenberg used. The resulting group of  
17          companies is reasonable for purposes of estimating the cost of equity for LG&E's  
18          electric operations. In addition, using the same group as Mr. Rosenberg will  
19          eliminate at least one disagreement between us in our respective analyses and  
20          provide a consistent basis on which to compare our results.

21  
22          The group of comparison electric companies I used in my analysis is:

- 23  
24          1.       Alliant Energy Corp.  
25          2.       Ameren Corp.  
26          3.       CH Energy Group  
27          4.       Consolidated Edison  
28          5.       DTE Energy Co.  
29          6.       Exelon Corp.  
30          7.       MGE Energy  
31          8.       NSTAR

- 1 9. Pinnacle West
- 2 10. SCANA Corp.
- 3 11. Southern Co.
- 4 12. Vectren Corp.
- 5 13. Wisconsin Energy Corp.
- 6
- 7

8 **Q. What was your first step in determining the DCF return on equity for the**  
9 **comparison group?**

10  
11 A. I first determined the current dividend yield,  $D_0/P_0$ , from the basic equation. My  
12 general practice is to use six months as being the most reasonable period over which  
13 to estimate the dividend yield. The six-month period I used covered the period from  
14 September 2003 through February 2004. I then obtained the indicated annualized  
15 dividend as reported in the Standard and Poor's Stock Guide over the same six-  
16 month period. The annualized dividend divided by the average monthly price  
17 represents the average dividend yield for each month in the period.

18  
19 Using this approach results in an average dividend yield for the group of 4.48%.  
20 These calculations are shown in Exhibit \_\_\_\_ (RAB-3).

21  
22 **Q. Having established the average dividend yield, how did you determine the**  
23 **expected growth rate for the electric comparison group?**

24 A. "Expected" refers to the investor's expected growth rate. The task, in theory, is to  
25 use a growth rate that will correctly forecast the constant rate of growth in dividends.  
26 We refer to a perpetual growth rate since the DCF model has no cut-off point. The  
27 obvious fact is that there is no way to know with absolute certainty what investors  
28 expect the growth rate to be in the short term, much less in perpetuity. The dividend

1 growth rate is a function of earnings growth and the payout ratio, neither of which is  
2 known precisely for the future.

3

4 In this analysis, I relied on two major sources of analysts' forecasts for growth.  
5 These sources are Value Line and Zacks Investment Research ("Zacks").

6

7 **Q. Please briefly describe Value Line and Zacks.**

8

9 A. Value Line is an investment survey that is published for approximately 1,700  
10 companies, both regulated and unregulated. It is updated quarterly and probably  
11 represents the most comprehensive and widely used of all investment information  
12 services. It provides both historical and forecasted information on a number of  
13 important data elements. Value Line neither participates in financial markets as a  
14 broker nor works for the utility industry in any capacity of which I am aware.

15

16 According to Zacks' website, Zacks "was formed in 1978 to compile, analyze, and  
17 distribute investment research to both institutional and individual investors."  
18 Zacks gathers opinions from a variety of analysts on earnings growth forecasts for  
19 numerous firms including regulated electric utilities. The estimates of the analysts  
20 responding are combined to produce consensus average and median estimates of  
21 earnings growth.

22

23 **Q. Why did you rely on analysts' forecasts in your analysis?**

24

1 A. Recent finance literature has shown that analysts' forecasts provide better predictions  
2 of future growth than do estimates based on historical growth alone<sup>2</sup>.

3

4 **Q. How did you utilize your data sources to estimate growth rates for the**  
5 **comparison group?**

6

7 A. Exhibit \_\_\_\_ (RAB-4, pages 1 and 2, presents the details of the calculations for the  
8 Value Line and Zacks forecasted growth estimates. The Value Line growth  
9 estimates are based on five-year forecasts for dividend growth and six-year forecasts  
10 for earnings growth. The Zacks earnings growth estimates are forecasts for the next  
11 five years. These earnings and dividend growth estimates for the comparison group  
12 are summarized on Columns (1) through (3) of page 1 of Exhibit \_\_\_\_ (RAB-4).

13

14 I also utilized the sustainable growth formula in estimating the expected growth rate.  
15 The sustainable growth method, also known as the retention ratio method,  
16 recognizes that the firm's retaining a portion of its earnings fuels growth in  
17 dividends. These retained earnings, which are plowed back into the firm's asset  
18 base, are expected to earn a rate of return. This, in turn, generates growth in the  
19 firm's book value, market value, and dividends.

20

21 The sustainable growth method is calculated using the following formula:

22

---

<sup>2</sup> See Rozeff (*Journal of Forecasting*, Volume 2, Issue No. 4, 1983), Brown and Rozeff (*Journal of Finance*, March 1978), Moyer, Chatfield and Kelley (*International Journal of Forecasting*, 1985), and a study by Vander Weide and Carleton that was incorporated as part of the Edison Electric Institute's comments in the Federal Energy Regulatory Commission's generic cost of capital proceedings.

1 
$$G = B \times R$$

2  
3 *Where: G = expected retention growth rate*  
4 *B = the firm's expected retention ratio*  
5 *R = the expected return*

6 In its proper form, this calculation is forward-looking. That is, the investors'  
7 expected retention ratio and return must be used in order to measure what investors  
8 anticipate will happen in the future. Data on expected retention ratios and returns  
9 may be obtained from Value Line.

10  
11 The expected sustainable growth estimates for the comparison group are presented  
12 in Column (4) on page 1 of Exhibit \_\_\_\_ (RAB-4). The data came from the Value  
13 Line forecasts for the comparison group.

14  
15 **Q. How did you proceed to determine the DCF cost of equity for the electric**  
16 **comparison group?**

17  
18 A. To estimate the expected dividend yield ( $D_1$ ) for the group, the current dividend  
19 yield must be moved forward in time to account for dividend increases over the next  
20 twelve months. I estimated the expected dividend yield by multiplying the current  
21 dividend yield by one plus one-half the expected growth rate.

22  
23 I then added the expected growth rate ranges to the expected dividend yield for the  
24 comparison group. The calculation of the resulting DCF returns on equity is  
25 presented on page 3 of Exhibits \_\_\_\_ (RAB-4).

1 **Q. Please explain how you calculated your DCF cost of equity estimates.**

2 A. Page 3 of Exhibit \_\_\_\_ (RAB-4) shows four alternative DCF cost of equity  
3 calculations using the four growth estimates shown on page 1. In calculating the  
4 average growth rates for the group, I eliminated negative earnings growth rates for  
5 two companies in the group because negative growth rates are not appropriate  
6 proxies for long-term growth expectations.

7

8 The DCF returns range from 7.34% to 9.31%. The DCF return on equity utilizing  
9 the average of all the growth rates is 8.66%.

10

11 **Capital Asset Pricing Model**

12

13 **Q. Briefly summarize the Capital Asset Pricing Model ("CAPM") approach.**

14

15 A. The theory underlying the CAPM approach is that investors, through diversified  
16 portfolios, may combine assets to minimize the total risk of the portfolio.  
17 Diversification allows investors to diversify away all risks specific to a particular  
18 company and be left only with market risk that affects all companies. Thus, CAPM  
19 theory identifies two types of risks for a security: company-specific risk and market  
20 risk. Company-specific risk includes such events as strikes, management errors,  
21 marketing failures, lawsuits, and other events that are unique to a particular firm.  
22 Market risk includes inflation, business cycles, war, variations in interest rates, and  
23 changes in consumer confidence. Market risk tends to affect all stocks and cannot  
24 be diversified away. The idea behind the CAPM is that diversified investors are  
25 rewarded with returns based on market risk.

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Within the CAPM framework, the expected return on a security is equal to the risk-free rate of return plus a risk premium that is proportional to the security's market, or nondiversifiable risk. Beta is the factor that reflects the inherent market risk of a security. It measures the volatility of a particular security relative to overall market for securities. For example, a stock with a beta of 1.0 indicates that if the market rises by 15.00%, that stock will also rise by 15.00%. This stock moves in tandem with movements in the overall market. A stock with a beta of 0.5 will only rise or fall 50.00% as much as the overall market. So with an increase in the market of 15.00%, this stock will only rise 7.50%. Stocks with betas greater than 1.0 will rise and fall more than the overall market. Thus, beta is the relevant measure of the riskiness of individual securities vis-à-vis the market.

Based on the foregoing discussion, the equation for determining the return for a security in the CAPM framework is:

$$K = R_f + \beta(MRP)$$

- Where:
- K* = Required Return on equity
  - R<sub>f</sub>* = Risk-free rate
  - MRP* = Market risk premium
  - β* = Beta

This equation tells us about the risk/return relationship posited by the CAPM. Investors are risk averse and will only accept higher risk if they receive higher returns. These returns can be determined in relation to a stock's beta and the market risk premium. The general level of risk aversion in the economy determines the market risk premium. If the risk-free rate of return is 3.00% and the required return

1 on the total market is 15.00%, then the risk premium is 12.00%. Any stock's  
2 required return can be determined by multiplying its beta by the market risk  
3 premium. Stocks with betas greater than 1.0 are considered riskier than the overall  
4 market and will have higher required returns. Conversely, stocks with betas less  
5 than 1.0 will have required returns lower than the market as a whole.

6

7 **Q. In general, are there concerns regarding the use of the CAPM in estimating the**  
8 **return on equity?**

9

10 A. Yes. There is considerable controversy surrounding the use of the CAPM<sup>3</sup>. There is  
11 strong evidence that beta is not the primary factor in determining the risk of a  
12 security. For example, Value Line states that its Safety Rank is a measure of total  
13 risk, not its calculated beta coefficient. Beta coefficients usually describe only a  
14 small amount of total investment risk. Also, recent finance literature has questioned  
15 the usefulness of beta in predicting the relationship between risk and required return.  
16 Finally, a considerable amount of judgment must be employed in determining the  
17 risk-free rate and market return portions of the CAPM equation. The analyst's  
18 application of judgment can significantly influence the results obtained from the  
19 CAPM. My past experience with the CAPM indicates that it is prudent to use a  
20 wide variety of data in estimating returns. Of course, the range of results may also  
21 be wide, indicating the difficulty in obtaining a reliable estimate from the CAPM.

22

23 **Q. How did you estimate the market return portion of the CAPM?**

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<sup>3</sup> For a more complete discussion of some of the controversy surrounding the use of the CAPM, refer to *A Random Walk Down Wall Street* by Burton Malkiel, pages 229 – 239, 1999 edition.

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A. The first source I used was the Value Line Investment Survey for Windows. Value Line provides a summary statistical report detailing, among other things, forecasted growth in dividends, earnings and book value for the companies Value Line follows. I have presented these three growth rates and the average on page 2 of Exhibit \_\_\_\_ (RAB-5). The average growth rate is 9.91%. Combining this growth rate with the average expected dividend yield of the Value Line companies of 1.21% results in an expected market return of 11.12%. The detailed calculations are shown on page 1 of Exhibit \_\_\_\_ (RAB-5).

I also considered a supplemental check to this market estimate. Ibbotson Associates published a study of historical returns on the stock market in its *Stocks, Bonds, Bills, and Inflation 2003 Yearbook*. Some analysts employ this historical data to estimate the market risk premium of stocks over the risk-free rate. The assumption is that a risk premium calculated over a long period of time is reflective of investor expectations going forward. Exhibit \_\_\_\_ (RAB-6) presents the calculation of the market return using the Ibbotson historical data.

**Q. Please address the use of historical earned returns to estimate the market risk premium.**

A. The use of historic earned returns on the Standard and Poor 500 to estimate the current market risk premium is rather suspect because it naively assumes that investors currently expect historical risk premiums to continue unchanged into the future forever regardless of present or forecasted economic conditions. Brigham,

1 Shome and Vinson noted the following with respect to the use of historic risk  
2 premiums calculated using the returns as reported by Ibbotson and Sinquefeld  
3 (referred to in the quote as “I&S”):

4  
5 **“There are both conceptual and measurement problems with**  
6 **using I&S data for purposes of estimating the cost of capital.**  
7 **Conceptually, there is no compelling reason to think that**  
8 **investors expect the same relative returns that were earned in**  
9 **the past. Indeed, evidence presented in the following sections**  
10 **indicates that relative expected returns should, and do, vary**  
11 **significantly over time. Empirically, the measured historic**  
12 **premium is sensitive both to the choice of estimation horizon and**  
13 **to the end points. These choices are essentially arbitrary, yet can**  
14 **result in significant differences in the final outcome.”<sup>4</sup>**

15  
16 In summary, the use of historic earned returns should be viewed with a great deal of  
17 caution and skepticism. There is no real support for the proposition that an  
18 unchanging, mechanistically applied historical risk premium is representative of  
19 current investor expectations and return requirements.

20  
21 **Q. How did you determine the risk free rate?**

22  
23 **A.** I used the average yields on the 20-year Treasury bond and five-year Treasury  
24 note over the six-month period from September 2003 through February 2004.  
25 The 20-year Treasury bond is often used by rate of return analysts as the risk-free  
26 rate, but it contains a significant amount of interest rate risk. The five-year  
27 Treasury note carries less interest rate risk than the 20-year bond and is more

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<sup>4</sup> Brigham, E.F., Shome, D.K. and Vinson, S.R., “The Risk Premium Approach to Measuring a Utility’s Cost of Equity”, *Financial Management*, Spring 1985, pp. 33-45.

1           stable than three-month Treasury bills. Therefore, I have employed both of these  
2           securities as proxies for the risk-free rate of return. This approach provides a  
3           reasonable range over which the CAPM may be estimated.

4

5   **Q.    What is your estimate of the market risk premium?**

6

7   A.    Exhibit \_\_\_\_ (RAB-5), line 9 of page 1, presents my estimates of the market risk  
8           premium based on a DCF analysis applied to current market data. The market risk  
9           premium is 6.01% using the 20-year Treasury bond and 7.93% using the five-year  
10          Treasury bond.

11

12          Utilizing the historical Ibbotson data on market returns, the market risk premium  
13          ranges from 5.00% to 7.00%. This is shown on Exhibit \_\_\_\_ (RAB-6).

14

15   **Q.    How did you determine the value for beta?**

16

17   A.    I obtained the betas for the companies in the electric company comparison group  
18          from most recent Value Line reports. The average of the Value Line betas for the  
19          electric group is .68.

20

21   **Q.    Please summarize the CAPM results.**

22

23   A.    Please refer to line 14 of page 1 of Exhibit \_\_\_\_ (RAB-5) for the CAPM results for  
24          the 20-year and five-year Treasury bond yields. For the electric comparison group,  
25          the CAPM returns are 8.59% (five-year bond) and 9.20% (20-year bond).

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The CAPM results using the historical Ibbotson data range from 8.51% to 9.89%.

**Conclusions and Recommendations**

**Q. Please summarize the cost of equity estimates you have developed up to this point in your testimony.**

A. Utilizing the DCF model, I developed cost of equity estimates for a comparison group of electric utility companies. The results for the electric company comparison group using the constant-growth DCF model ranged from 7.34% to 9.31%. The results using the CAPM ranged from 8.51% to 9.89%.

**Q. What is your recommendation for a fair rate of return on equity for KU's electric operations?**

A. My recommended rate of return on equity for KU's electric operations is 8.70%. This recommendation is based on the results of my DCF analyses. This recommendation also falls within the range of CAPM estimates.

I believe this value is the most representative of the investor-required return on equity for an A-rated company such as KU. This return on equity is fair and reasonable in light of the historically low interest rates that currently exist in the marketplace today. Given an average public utility bond yield at around 6%, an 8.70% return on equity for KU's electric operations is certainly reasonable.

1                   **IV.     RESPONSE TO KU WITNESS ROBERT ROSENBERG**  
2

3  
4   **Q.     Have you reviewed the Testimony of Mr. Rosenberg?**

5  
6   A.     Yes. I have reviewed Mr. Rosenberg's Testimony and exhibits. The purpose of this  
7           section of my Direct Testimony is to respond to Mr. Rosenberg's recommended cost  
8           of equity for KU.  
9

10 **Q.     What is Mr. Rosenberg's recommended cost of equity for KU?**

11  
12 A.     Mr. Rosenberg recommended a cost of equity for KU of 11.25%.  
13

14 **Q.     Is Mr. Rosenberg's cost of equity recommendation reasonable?**

15  
16 A.     No. Mr. Rosenberg's recommended 11.25% cost of equity for KU is excessive and  
17           I recommend that the KPSC reject it.  
18

19 **Q.     How is the remainder of this section of your Direct Testimony organized?**

20  
21 A.     The rest of this section will address the specifics of Mr. Rosenberg's Testimony.  
22

23 **Rate of Return in Context**  
24

1 **Q. On pages 5 through 7 of his Testimony, Mr. Rosenberg described his view of**  
2 **the importance of the level of rate of return in “the current economic and**  
3 **financial climate (page 5, lines 3 through 4).” Please summarize your view of**  
4 **his comments.**

5  
6 A. Mr. Rosenberg described several concerns regarding the level of allowed returns in  
7 the utility industry. His main concerns are as follows:

- 8
- 9 • Utility bond downratings have outnumbered upratings in 2003.
  - 10 • Utility financings have been problematic in some instances.
  - 11 • According to FERC Chairman William Massey, investor confidence has  
12 been shaken by the western energy crisis and the collapse of Enron.

13  
14 **Q. Please respond to the concerns about utility rate of return levels raised by Mr.**  
15 **Rosenberg in his Testimony.**

16  
17 A. First, Mr. Rosenberg failed to mention the low level of interest rates and utility bond  
18 yields that are currently present in the U.S. economy. This one factor, more than any  
19 other, suggests that the investor’s required return on equity for utility companies  
20 should be at correspondingly lower levels than at any time in recent memory. Based  
21 on my analysis, current interest rate levels also indicate that Mr. Rosenberg’s  
22 recommended return on equity for KU is grossly overstated.

23  
24 Second, the concerns raised by Mr. Rosenberg regarding certain events in the utility  
25 industry do not apply to KU. In my view, the market has fully sorted out the effects

1 of the Enron collapse and the western energy crisis and has moved on. I believe that  
2 my opinion is borne out by the fact that utility share prices experienced a significant  
3 rebound in 2003. Based on my review of KU's present situation, I do not believe  
4 that Enron and the western energy crisis currently have any negative effect on the  
5 Company.

6  
7 I believe it is clear that investors and credit rating agencies will evaluate relative risk  
8 and return requirements based, in part, on the extent to which a utility company is  
9 involved in nonregulated activities. On page 8, lines 23 through 27 of his  
10 Testimony, Mr. Rosenberg provided a quote from S&P's publication *Regulatory*  
11 *Support for U.S. Electric Utility Credit Continues To Disappoint* which is  
12 informative in this regard. S&P stated that the rating trend of the electric industry is  
13 decidedly negative, "with insufficient regulated authorized returns and *expanding*  
14 *nonregulated investments providing the most downward pressure.*"

15  
16 Nonregulated activities are indeed viewed as more risky than regulated utility  
17 operations and, as this quote points out, can have a negative effect on earnings. It is  
18 important to note that in this proceeding, Mr. Rosenberg and I are providing  
19 recommendations to the Commission as to the allowed return on KU's regulated  
20 utility operations in Kentucky. My discussion of the Company in Section II of my  
21 testimony indicates that KU is a lower risk company compared to the average  
22 electric utility. The credit agency reports I reviewed indicate no adverse impacts  
23 from Enron or the western energy crisis. I believe these concerns cited by Mr.  
24 Rosenberg are irrelevant in determining the cost of equity for KU.

25

1 I would also like to respond to Mr. Rosenberg's concern regarding financing  
2 difficulties. No evidence was presented by Mr. Rosenberg or any other KU witness  
3 that KU has had problems obtaining financing. Given the Company's current credit  
4 profile, KU should be able to continue to obtain financing at reasonable cost and  
5 terms.

6  
7 **Discounted Cash Flow Model**

8  
9 **Q. Please briefly summarize Mr. Rosenberg's DCF calculations.**

10  
11 A. Mr. Rosenberg employed a two-stage DCF model. He did this because, according to  
12 his testimony on page 16, the constant growth form of the DCF is not applicable  
13 because of the current state of flux in the electric industry today.

14  
15 Mr. Rosenberg started with the comparison group of electric companies that I  
16 described earlier in my Direct Testimony. He used a six-month average of prices for  
17 the companies in this group. The expected two-stage growth rate was estimated as  
18 follows. The first stage was based on the Value Line and First Call earnings growth  
19 rates. The second stage consisted of three proxies for long-term growth: (1) long-  
20 term growth rate in nominal Gross Domestic Product; (2) sustainable growth using  
21 Value Line projections; and, (3) projected industry growth from Zack's, Value Line,  
22 S&P, and First Call.

23

1 This two-stage approach to expected growth resulted in a DCF range of 10.1% to  
2 10.7% based on the average results for the group. These results are presented on  
3 page 20 of Mr. Rosenberg's Testimony.

4

5 **Q. Please describe the shortcomings of Mr. Rosenberg's two-stage DCF approach.**

6

7 A. Mr. Rosenberg's two-stage DCF model has a number of serious flaws that tend to  
8 overstate the results.

9

10 First, Mr. Rosenberg erroneously assumed that the Value Line and First Call  
11 earnings growth rates are appropriate for the first stage of his growth rate analysis. It  
12 is important to keep in mind that the DCF model discounts cash flows in the form of  
13 *dividends* and equates that cash flow to the stock price. Mr. Rosenberg's DCF  
14 formula on page 13 of his Testimony shows that dividends are discounted, not  
15 earnings. I agree that investors expect the dividend growth rate to be lower than  
16 earnings growth over the next five years. This is consistent with the results in  
17 Exhibit \_\_\_\_ (RAB-3), page 1 of 3, which shows that the Value Line *dividend*  
18 growth forecast is much lower than the three *earnings* growth forecasts. For a  
19 proper two-stage growth rate analysis to be conducted, Mr. Rosenberg should have  
20 used the lower dividend growth rate for his first stage. Then, a higher second stage  
21 growth rate could be applied based on expected earnings or retention growth for the  
22 industry. Mr. Rosenberg's approach inflated his two-stage DCF results.

23

24 Second, I disagree with Mr. Rosenberg's use of long-term GDP growth as the  
25 second stage. Mr. Rosenberg presented no evidence that electric utility dividend

1 growth is correlated with nominal GDP growth over time. In fact, I believe that the  
2 available data shows that expected long-term growth for the electric utility industry  
3 should be lower than that of the stock market as a whole. Referring to Exhibit  
4 \_\_\_\_ (RAB-5), which contains my CAPM analysis, the expected earnings growth  
5 rate for the stock market as a whole is 9.91%, compared to the average growth rate  
6 for the comparison group of 4.09%. Utilities have much higher dividend yields than  
7 the stock market as a whole. These higher yields tend to compensate somewhat for  
8 lower expected growth rates. To apply a higher growth rate based on total economic  
9 growth will overstate the expected growth rate for electric utilities and the expected  
10 return. Mr. Rosenberg's use of GDP growth should be rejected.

11

12 **Q. Are there better long-term growth assumptions for the industry?**

13

14 A. Yes. Value Line presents forecasted retention growth for the industry in its  
15 introductory description of the electric utility industry in the Value Line Investment  
16 Survey. In the March 5, 2004 issue, page 154, Value Line projects that the long-  
17 term retention growth for the electric utility industry will be 4.5%. This is more  
18 relevant to investors than Mr. Rosenberg's unfounded assumption regarding GDP  
19 growth of 5.91%.

20

21 **Q. Have you performed an alternative calculation of the two-stage DCF growth**  
22 **rate based on the arguments you presented earlier?**

23

24 A. Yes. Exhibit \_\_\_\_ (RAB-7) presents three alternative calculations of Mr.  
25 Rosenberg's two-stage DCF analysis that he presented in Schedule 3, page 1 of 3.

1 For the first stage, I used the dividend growth rates from Value Line. For the second  
2 stage, I used three alternative growth estimates: long-term nominal GDP growth of  
3 5.91% as presented by Mr. Rosenberg, Value Line's sustainable growth rate forecast  
4 for each company in the group, the industry growth projection of 5.30% used by Mr.  
5 Rosenberg and explained on pages 18 and 19 of his testimony.

6  
7 For purposes of this analysis, I accepted Mr. Rosenberg's long-term GDP growth  
8 rate for the second stage merely for presentation purposes to show the effect of  
9 properly using the near-term dividend growth rate while holding his long-term  
10 growth rate constant. I also used updated the six-month average stock prices for  
11 each company from Exhibit \_\_\_\_ (RAB-3). I also excluded Alliant from the analysis  
12 due to the fact that its Value Line dividend growth forecast was negative.

13  
14 Exhibit \_\_\_\_ (RAB-7), pages 1 through 3 shows that the corrected average DCF  
15 results for the group are 8.71%, 9.54%, and 10.06%. A proper two-stage DCF  
16 analysis results in much lower returns on equity than Mr. Rosenberg calculated. Mr.  
17 Rosenberg's analysis should be rejected.

18  
19 **Q. On page 18 of his Testimony, Mr. Rosenberg explained that he calculated his**  
20 **Value Line forecasted retention growth numbers by adding a component for**  
21 **external stock financing, sv. Please explain this component of retention growth.**

22  
23 **A.** The "sv" component refers to additional growth that accrues to shareholders through  
24 the issuance of common stock above book value. This component requires a

1 forecast of the growth in common stock and the fraction of funds obtained from the  
2 sale of common stock that accrues to the existing shareholders.

3

4 Mr. Rosenberg's work papers indicate that his use of the "sv" component added  
5 0.69% to the average retention growth estimate for the electric company group.

6

7 **Q. Do you agree with including an "sv" component to the retention growth**  
8 **calculation?**

9

10 A. No. Estimating growth from external stock financing is problematic. It requires a  
11 forecast of stock issuances for each company in the group as well as the accretion  
12 rate from sales above book value, if any. To forecast these variables is exceedingly  
13 difficult. Mr. Rosenberg assumed that the currently high market-to-book ratios  
14 being experienced by utility stocks would hold into the future. However, assuming  
15 that utility market-to-book ratios will fall to around 1.0 if these companies earn their  
16 required rate of return in the long run, then the "v" component falls to zero and the  
17 "sv" component would also fall to zero. No adjustment would be necessary in this  
18 scenario. Finally, I would note that in its presentation of forecasted retention growth  
19 in its individual company reports, Value Line does not add an "sv" component.  
20 Thus, I doubt whether investors would expect such an increment to retention growth  
21 in formulating their own growth expectations.

22

23 **Q. Mr. Rosenberg did not use a constant growth form of the DCF in this**  
24 **proceeding. He stated in his Testimony that it was inappropriate at this time.**  
25 **Please address the use of the constant-growth form of the DCF model.**

1

2 A. In my opinion, the constant growth form of the DCF is appropriate in today's  
3 economic environment. No one knows with certainty what investors' future growth  
4 expectations are. I believe my approach of averaging four forecasted growth rates  
5 for use in the constant growth DCF model is appropriate. It gives primary weight  
6 (75%) to higher earnings growth forecasts, but also recognizes and gives weight to  
7 lower near-term dividend growth. This array of expected growth rates can be used  
8 effectively to estimate investor-required returns for utilities at this time. I would add  
9 that when Mr. Rosenberg's two-stage DCF analysis is revised to appropriately  
10 reflect lower near-term dividend growth and long run retention growth, the results  
11 are quite close to my recommendation.

12

13

14 **Capital Asset Pricing Model**

15

16 **Q. Please briefly describe Mr. Rosenberg's approach to the CAPM.**

17

18 A. Mr. Rosenberg employed four alternative approaches to the CAPM. Each approach  
19 employed a beta of .65 for the comparison group of companies and a risk-free rate of  
20 return of 5.0%.

21

22 The first approach involved using the long-term historical risk premium of stocks  
23 over long-term Treasury Bonds from Ibbotson Associates' *Risk Premia Over Time*  
24 *Report: 2003*. This resulted in a CAPM cost of equity of 9.6%. Mr. Rosenberg also  
25 used an alternative version of the CAPM called the Empirical CAPM. This

1 formulation of the CAPM attempts to compensate for a potential understatement of  
2 CAPM returns for utilities that have betas less than 1.0. Mr. Rosenberg presented  
3 the ECAPM formula on page 24 of his Testimony. His result using the ECAPM  
4 was 10.2%.

5  
6 The second approach involved estimating a DCF cost of equity for the market using  
7 the Standard and Poor's 500. Mr. Rosenberg used an earnings growth rate of 13.0%  
8 for the S&P 500 and a dividend yield of 1.75% to calculate an expected return on the  
9 market of 14.75%. Mr. Rosenberg then derived a market risk premium and a CAPM  
10 cost of equity of 11.3%. The result of his ECAPM was 12.2%.

11  
12 Mr. Rosenberg then applied a size premium of 60 basis points, or 0.60%, to further  
13 increase the range of returns he calculated for the CAPM and ECAPM. Mr.  
14 Rosenberg did this based on the theory that small and mid-capitalization firms  
15 require higher returns than would otherwise be indicated by the CAPM. The  
16 resulting range of CAPM and ECAPM estimates is 10.2% to 12.8%.

17  
18  
19 **Q. Please turn to Mr. Rosenberg's use of the historical risk premium from**  
20 **Ibbotson Associates. What are your comments on this analysis?**

21  
22 **A.** One should approach historical risk premiums with a good deal of caution and  
23 skepticism. There is no good reason to suspect that investors expect historical risk  
24 premiums to apply into the future. Please refer to the quote on page 25 of my Direct  
25 Testimony, which discusses the potential pitfalls of relying on historical risk

1 premiums to estimate current investor required returns. This approach mechanically  
2 assumes that no matter what interest rates are, investors expect the same risk  
3 premium forever into the future. The article from which I took the quote on page 25  
4 showed that risk premiums vary substantially over time. The assumption of an  
5 unchanging risk premium is tenuous at best and, most likely, is unjustified.

6  
7 **Q. On page 28 of his Testimony, Mr. Rosenberg stated that the arithmetic mean of**  
8 **historical returns should be used to estimate the historical risk premium and**  
9 **that the geometric mean was inappropriate. Please address this issue.**

10  
11 A. I disagree with Mr. Rosenberg's position on the use of the geometric mean returns  
12 for purposes of computing the expected market return in the CAPM. Geometric  
13 mean returns are widely published and available to investors. For example, annual  
14 reports for mutual funds commonly report compounded yearly returns over periods  
15 such as three, five, or ten years and compare these compounded yearly returns to the  
16 overall market for stocks. Geometric means provide valuable information about the  
17 actual performance of assets over time and are relied upon by investors. It would be  
18 inappropriate to exclude consideration of the geometric mean return for purposes of  
19 assessing investors' future expectation of returns on the stock market.

20  
21 **Q. Please comment on Mr. Rosenberg's second approach that employed a DCF**  
22 **return on the S&P 500.**

1 A. Mr. Rosenberg's approach grossly overstated the expected return for the market.  
2 Exclusively using a five-year earnings growth estimate ignores a substantial amount  
3 of historical evidence and other projections that indicate that the 13% earnings  
4 growth rate he used is unsustainable for the long-term. For example, Exhibit  
5 \_\_\_\_ (RAB-5), page 2 of 2, shows that Value Line's expected growth rates range  
6 from 6.68% to 14.03% with an average of 9.91%. To ignore substantially lower  
7 dividend and book value growth rates is inappropriate and will inflate an analyst's  
8 DCF projection.

9  
10 In all of the numbers I cited, earnings growth is by far the highest value. To state  
11 that investors expect cash flows from dividends to grow at high earnings growth  
12 rates for the long-term is simply not supported by the weight of the evidence. This is  
13 why I used a wide range of expected growth rate estimates in formulating my DCF  
14 market return in Exhibit \_\_\_\_ (RAB-5). It is quite a challenge to estimate a DCF  
15 market return. For Mr. Rosenberg to limit his analysis to only earnings growth rate  
16 forecasts is both unjustified and unwise, particularly if this earnings growth rate is  
17 unsustainably high. I recommend the Commission reject Mr. Rosenberg's market  
18 DCF calculation.

19  
20 **Q. Did Mr. Rosenberg consider long-term GDP growth in estimating a DCF**  
21 **market return?**

22 A. No. Mr. Rosenberg failed to consider long-term GDP growth for his market DCF,  
23 even though he used it for his DCF analysis of electric utilities.

24

1 There are a number of different ways to devise a two-stage growth rate for the  
2 market using long-term GDP growth. For example, one could weight Mr.  
3 Rosenberg's S&P earnings growth rate of 13% by one-half and his long-term GDP  
4 growth estimate of 5.91% by one-half. This results in a two-stage growth rate of  
5 9.46%, very close to the 9.91% growth estimate I showed for the Value Line group  
6 of companies on Exhibit \_\_\_\_ (RAB-5). Adding 9.46% to Mr. Rosenberg's dividend  
7 yield of 1.75% results in a DCF market cost of equity of 11.21%. Using Mr.  
8 Rosenberg's risk-free rate of return of 5.0% results in a market premium of 6.21%.  
9 Finally, applying this revised market premium, the results of Mr. Rosenberg's  
10 CAPM are as follows:

11  
12 CAPM ROE =  $5.0 + 0.65 (6.21) = 9.04\%$

13  
14 Obviously, using lower near-term growth rates for the first stage of the analysis  
15 would produce even lower estimates of the CAPM cost of equity. I conclude that  
16 Mr. Rosenberg seriously overstated the CAPM result. I recommend that the  
17 Commission reject his CAPM analyses.

18  
19 **Q. Please address Mr. Rosenberg's use of the ECAPM.**

20  
21 A. In my opinion, use of the ECAPM further points out the weaknesses and  
22 inaccuracies of the CAPM. Most importantly, Mr. Rosenberg failed to provide any  
23 evidence that investors make the .25/.75 weighting in their own formulations of the  
24 CAPM, to the extent that investors use the CAPM at all in formulating their  
25 expected return on common equity. Second, the .25/.75 weighting factors may or

1 may not be applicable in the current economic environment. Third, I question the  
2 relevance of this entire exercise given questionable relationship between beta and  
3 common stock returns.

4  
5 **Q. Please address Mr. Rosenberg's addition of a size premium to his CAPM**  
6 **results.**

7  
8 A. Mr. Rosenberg's application of a size premium is unfounded and should be rejected  
9 by the Commission.

10

11 The data employed by Mr. Rosenberg come from Ibbotson Associates' publication  
12 *Risk Premium Over Time Report: 2003*. The so-called size premiums for low- and  
13 mid-capitalization stocks include stocks of both regulated utilities and other  
14 unregulated companies. Nothing in this data suggests that the size premiums apply  
15 to regulated utility companies, which are lower risk than the overall market and  
16 which have lower expected returns as a result. In my view, it is inappropriate to  
17 assume that there is a CAPM size premium that is applicable to regulated utilities  
18 based on the study relied upon by Mr. Rosenberg. I recommend that his 60 basis  
19 point size premium be rejected.

20

21 **Risk Premium**

22

23 **Q. Please briefly describe Mr. Rosenberg's risk premium approach.**

24

1 A. Mr. Rosenberg presented two alternative risk premium studies. The first relied upon  
2 historical earned returns from the Moody's electric utility common stock index. The  
3 second approach utilized Commission-allowed returns from 1980 through the third  
4 quarter of 2003.

5

6 **Q. Please comment on Mr. Rosenberg's first risk premium approach.**

7

8 A. Mr. Rosenberg's first risk premium approach suffers from the same infirmities as his  
9 CAPM formulation, which used the historical Ibbotson data. This approach naively  
10 assumes that a risk premium calculated over a long historic period and mechanically  
11 applied in today's economic environment can accurately reflect the investor required  
12 rate of return. This is incorrect. *Expected* risk premiums can and do change  
13 significantly over time. There is no reason to assume that in today's environment  
14 investors either expect or require a risk premium over utility bonds that is equivalent  
15 to a 69-year average historical risk premium. Current evidence strongly suggests  
16 that investors are requiring risk premiums over bonds that are much smaller than the  
17 4.29% historical average risk premium calculated by Mr. Rosenberg. This evidence  
18 comes from my recent experience in the utility industry, my current DCF and  
19 CAPM calculation, and the corrections to Mr. Rosenberg's DCF and CAPM  
20 calculations that I presented earlier.

21

22 **Q. Please comment on Mr. Rosenberg's second risk premium approach.**

23 A. I disagree with relying on historical return on equity awards from other commissions  
24 in setting the return on equity in this proceeding. This approach suggests that the  
25 KPSC should rely on what other commissions did in past cases rather than rely on

1 the evidence presented in this case. These decisions are based on many factors that  
2 may have absolutely no bearing on KU's circumstances.

3  
4 Further, KU is lower-risk utility company. Assuming that the average of these rate  
5 awards would apply to an average risk utility, then KU's return would be lower.  
6 KU's risk is further mitigated by the environmental surcharge, something that the  
7 average utility company would definitely not have the benefit of. The  
8 environmental surcharge significantly reduces the Companies' risk vis-à-vis other  
9 electric utilities.

10  
11 **Comparable Earnings**

12  
13 **Q. Please briefly summarize Mr. Rosenberg's comparable earnings approach.**

14  
15 A. Mr. Rosenberg calculated historical and projected earned returns on book equity for  
16 firms with a Value Line Safety Rank of 2. His results ranged from 13.7% to 14.5%.

17  
18 **Q. Please comment on Mr. Rosenberg's comparable earnings approach.**

19  
20 A. The comparable earnings approach should be rejected.

21  
22 Earned returns on book equity for unregulated companies have absolutely no  
23 relevance to the required return for KU. Using historical earned returns on book  
24 equity is especially inappropriate since it assumes that earned book equity returns  
25 are what investors expect for the future regardless of economic conditions.

1

2 It would appear that Mr. Rosenberg did not place any reliance on his comparable  
3 earnings results in formulating his recommended return on equity range since 13.7%  
4 and 14.5% substantially exceed the top end of his recommended range. Obviously,  
5 these returns are unreasonable on their face because they are far greater than any of  
6 the results that either Mr. Rosenberg or I presented in our testimonies.

7

8 **KU Should Not Be Awarded a Return In the Upper End of the Range**

9

10 **Q. What reasons did Mr. Rosenberg give for LG&E and KU being awarded a**  
11 **return on equity in the upper end of his recommended range?**

12

13 A. Mr. Rosenberg gave several reasons. First, KU deserves a special award for being  
14 an efficient utility. Second, the “unsettled nature” of the electric industry indicates  
15 the need for a solid company financial condition at this time. Third, the current low  
16 level of interest rates indicates that upward changes are likely, especially in light of  
17 large projected Federal budget deficits.

18

19 **Q. Are any of these reasons valid?**

20 A. No. None of these reasons provides a valid basis for increasing the Companies' cost  
21 of equity in this proceeding.

22

23 **Q. Please address the first of Mr. Rosenberg’s reasons.**

24

1 A. A utility company should not be given a special reward for providing low-cost,  
2 efficient service to its customers. These are things that customers should expect  
3 from a prudently run utility company and they should not have to pay extra for them.  
4 Moreover, KU, like all electric utilities in Kentucky, are low-cost electric providers  
5 for reasons that are inherent to Kentucky and not necessarily related to management  
6 performance. Low-cost coal is abundant in Kentucky. Proximity to this coal means  
7 low transportation and fuel costs. Nuclear power plants are effectively outlawed in  
8 Kentucky. State utility taxes are low in Kentucky relative to the rest of the country.  
9 The KPSC has exercised prudent regulation, including the imposition of minimal  
10 Demand Side Management costs and virtually no PURPA purchased power  
11 expenses. There is no good reason to reward shareholders for these factors.

12

13 In addition, on advice from counsel, I believe that it would be illegal for the KPSC  
14 to add an increment to the return on equity for efficiency. My opinion is based on a  
15 1982 case decided by the Kentucky Supreme Court involving South Central Bell  
16 Telephone Company and the Kentucky Utility Regulatory Commission<sup>5</sup>. In this  
17 case, the Court struck down a penalty to the return on equity that the Commission  
18 imposed due to poor service on the part of the telephone company. In this decision,  
19 the Court stated:

20

21 **“The rate making process is to provide for the utility a**  
22 **reasonable profit on its operations so that its owners may**  
23 **achieve a return on their investment. Such matters are**  
24 **purely those of a financial nature.**

25

26 **In addition, we concur with the trial judge that the**  
27 **quality of service is not germane to the normal, time-**

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<sup>5</sup> Ky., 837 S.W. 2d 649

1                   **tested factors that go into the determination of a proper**  
2                   **rate for the services rendered by a utility.”**

3

4                   I believe that this reasoning also applies to increments the Commission might add to  
5                   the return on equity for efficiency.

6

7                   **Q.     Please address the second reason given by Mr. Rosenberg that relates to the**  
8                   **“unsettled nature of the industry.”**

9

10                  A.     If investors believe that the alleged “unsettled nature of the industry” is making  
11                  utilities more risky, then those perceptions will already be reflected in utility  
12                  common stock prices. Thus, to the extent this additional risk exists, it is already  
13                  reflected in the stock prices used by Mr. Rosenberg and myself in our DCF analyses.  
14                  No further upward adjustment would be warranted. To add an additional increment  
15                  to the return on equity for such alleged risk would, in effect, be double counting and  
16                  overstating the investors’ required return.

17

18                  In addition, I believe that it is highly unlikely that the “unsettled situation” that Mr.  
19                  Rosenberg described would have a measurable effect on KU, assuming that there is  
20                  any such effect in the first place. As I stated earlier in my Direct Testimony, KU is a  
21                  lower-risk company that operates in a regulatory environment in which restructuring  
22                  and retail electric competition is not present. It is highly doubtful that any stock  
23                  market effects from Enron and the western energy crisis, which happened years ago,  
24                  are having a negative impact on KU today.

25

1 **Q. Please address the third point raised by Mr. Rosenberg regarding the current**  
2 **state of interest rates.**

3

4 A. Current utility bond yields are at their lowest point in recent memory. This certainly  
5 does not justify a *higher* return on equity than one's analysis suggests. Indeed,  
6 current stock market data points to lower required returns in response to low interest  
7 rates. Mr. Rosenberg's speculation regarding the future course of interest rates is an  
8 insufficient basis for raising his recommended cost of equity for KU to the upper end  
9 of his range. I recommend that the Commission reject his recommendation.

10

11 **Q. Does this conclude your testimony?**

12

13 A. Yes.

**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

**IN THE MATTER OF:**

<b>AN ADJUSTMENT OF THE ELECTRIC</b>	)	
<b>RATES, TERMS, AND CONDITIONS OF</b>	)	<b>CASE NO.</b>
<b>KENTUCKY UTILITIES COMPANY</b>	)	<b>2003-004345</b>

**EXHIBITS**  
**OF**  
**RICHARD A. BAUDINO**

**ON BEHALF OF THE**  
**KENTUCKY INDUSTRIAL UTILITY CUSTOMERS, INC.**

**J. KENNEDY AND ASSOCIATES, INC.**  
**ROSWELL, GEORGIA**

**MARCH 2004**

## **RESUME OF RICHARD A. BAUDINO, DIRECTOR OF CONSULTING**

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### **EDUCATION**

**New Mexico State University, M.A.**  
Major in Economics  
Minor in Statistics

**New Mexico State University, B.A.**  
Economics  
English

Twenty years of experience in utility ratemaking. Broad based experience in revenue requirement analysis, cost of capital, utility financing, phase-ins and rate design. Has designed revenue requirement and rate design analysis programs.

### **REGULATORY TESTIMONY**

Preparation and presentation of expert testimony in the areas of:

Electric and Gas Utility Rate Design  
Cost of Capital for Electric, Gas and Water Companies  
Ratemaking Treatment of Generating Plant Sale/Leasebacks  
Electric and Gas Utility Cost of Service  
Revenue Requirements  
Gas industry restructuring and competition

## RESUME OF RICHARD A. BAUDINO, DIRECTOR OF CONSULTING

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### **EXPERIENCE**

1989 to

**Present:** Kennedy and Associates: **Director of Consulting** - Responsible for consulting assignments in the area of revenue requirements, rate design, cost of capital, economic analysis of generation alternatives, gas industry restructuring and competition.

1982 to

**1989:** New Mexico Public Service Commission Staff: **Utility Economist** - Responsible for preparation of analysis and expert testimony in the areas of rate of return, cost allocation, rate design, finance, phase-in of electric generating plants, and sale/leaseback transactions.

### **CLIENTS SERVED**

#### **Regulatory Commissions**

Louisiana Public Service Commission

#### **Industrial Groups**

Ad Hoc Committee for a Competitive  
Electric Supply System  
Air Products and Chemicals, Inc.  
Arkansas Electric Energy Consumers  
Arkansas Gas Consumers  
Armco Steel Company, L.P.  
Association of Business Advocating  
Tariff Equity  
General Electric Company  
Industrial Energy Consumers  
Kentucky Industrial Utility Consumers  
Large Electric Consumers Organization  
Newport Steel  
Northwest Arkansas Gas Consumers  
Maryland Industrial Group  
Occidental Chemical  
PSI Industrial Group  
Taconite Intervenors (Minnesota)  
Tyson Foods

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**J. KENNEDY AND ASSOCIATES, INC.**

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2004**

<b>Date</b>	<b>Case</b>	<b>Jurisdct.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
3/83	1780	NM	New Mexico Public Service Commission	Boles Water Co.	Rate design, rate of return.
10/83	1803, 1817	NM	New Mexico Public Service Commission	Southwestern Electric Coop	Rate design.
11/84	1833	NM	New Mexico Public Service Commission	El Paso Electric Co.	Service contract approval, rate design, performance standards for Palo Verde nuclear generating system
1983	1835	NM	New Mexico Public Service Commission	Public Service Co. of NM	Rate design.
1984	1848	NM	New Mexico Public Service Commission	Sangre de Cristo Water Co.	Rate design.
02/85	1906	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
09/84	1907	NM	New Mexico Public Service Commission	Jornada Water Co.	Rate of return.
11/85	1957	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
04/86	2009	NM	New Mexico Public Service Commission	El Paso Electric Co.	Phase-in plan, treatment of sale/leaseback expense.
06/86	2032	NM	New Mexico Public Service Commission	El Paso Electric Co.	Sale/leaseback approval.
09/86	2033	NM	New Mexico Public Service Commission	El Paso Electric Co.	Order to show cause, PVNGS audit.
02/87	2074	NM	New Mexico Public Service Commission	El Paso Electric Co.	Diversification.
05/87	2089	NM	New Mexico Public Service Commission	El Paso Electric Co.	Fuel factor adjustment.
08/87	2092	NM	New Mexico Public Service Commission	El Paso Electric Co.	Rate design.

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2004**

<b>Date</b>	<b>Case</b>	<b>Jurisdct.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
10/88	2146	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Financial effects of restructuring, reorganization.
07/88	2162	NM	New Mexico Public Service Commission	El Paso Electric Co.	Revenue requirements, rate design, rate of return.
01/89	2194	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Economic development.
1/89	2253	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Financing.
08/89	2259	NM	New Mexico Public Service Commission	Homestead Water Co.	Rate of return, rate design.
10/89	2262	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Rate of return.
09/89	2269	NM	New Mexico Public Service Commission	Ruidoso Natural Gas Co.	Rate of return, expense from affiliated interest.
12/89	89-208-TF	AR	Arkansas Electric Energy Consumers	Arkansas Power & Light Co.	Rider M-33.
01/90	U-17282	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
09/90	90-158	KY	Kentucky Industrial Utility Consumers	Louisville Gas & Electric Co.	Cost of equity.
09/90	90-004-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Cost of equity, transportation rate.
12/90	U-17282 Phase IV	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
04/91	91-037-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Transportation rates.
12/91	91-410-EL-AIR	OH	Air Products & Chemicals, Inc., Armco Steel Co., General Electric Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Cost of equity.

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2004**

<b>Date</b>	<b>Case</b>	<b>Jurisdct.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
05/92	910890-EI	FL	Occidental Chemical Corp.	Florida Power Corp.	Cost of equity, rate of return.
09/92	92-032-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost of equity, rate of return, cost-of-service.
09/92	39314	ID	Industrial Consumers for Fair Utility Rates	Indiana Michigan Power Co.	Cost of equity, rate of return.
09/92	92-009-U	AR	Tyson Foods	General Waterworks	Cost allocation, rate design.
01/93	92-346	KY	Newport Steel Co.	Union Light, Heat & Power Co.	Cost allocation.
01/93	39498	IN	PSI Industrial Group	PSI Energy	Refund allocation.
01/93	U-10105	MI	Association of Businesses Advocating Tariff Equality (ABATE)	Michigan Consolidated Gas Co.	Return on equity.
04/93	92-1464-EL-AIR	OH	Air Products and Chemicals, Inc., Armco Steel Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Return on equity.
09/93	93-189-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Transportation service terms and conditions.
09/93	93-081-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost-of-service, transportation rates, rate supplements; return on equity; revenue requirements.
12/93	U-17735	LA	Louisiana Public Service Commission Staff	Cajun Electric Power Cooperative	Historical reviews; evaluation of economic studies.
03/94	10320	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric Co.	Trimble County CWIP revenue refund.

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2004**

<b>Date</b>	<b>Case</b>	<b>Jurisdic.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
4/94	E-015/ GR-94-001	MN	Large Power Intervenors	Minnesota Power Co.	Evaluation of the cost of equity, capital structure, and rate of return.
5/94	R-00942993	PA	PG&W Industrial Intervenors	Pennsylvania Gas & Water Co.	Analysis of recovery of transition costs.
5/94	R-00943001	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Evaluation of cost allocation, rate design, rate plan, and carrying charge proposals.
7/94	R-00942986	PA	Armco, Inc., West Penn Power Industrial Intervenors	West Penn Power Co.	Return on equity and rate of return.
7/94	94-0035- E-42T	WV	West Virginia Energy Users' Group	Monongahela Power Co.	Return on equity and rate of return.
8/94	8652	MD	Westvaco Corp.	Potomac Edison Co.	Return on equity and rate of return.
9/94	930357-C	AR	West Central Arkansas Gas Consumers	Arkansas Oklahoma Gas Corp.	Evaluation of transportation service.
9/94	U-19904	LA	Louisiana Public Service Commission	Gulf States Utilities	Return on equity.
9/94	8629	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Transition costs.
11/94	94-175-U	AR	Arkansas Gas Consumers	Arkla, Inc.	Cost-of-service, rate design, rate of return.
3/95	RP94-343- 000	FERC	Arkansas Gas Consumers	NorAm Gas Transmission	Rate of return.
4/95	R-00943271	PA	PP&L Industrial Customer Alliance	Pennsylvania Power & Light Co.	Return on equity.
6/95	U-10755	MI	Association of Businesses Advocating Tariff Equity	Consumers Power Co.	Revenue requirements.
7/95	8697	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Cost allocation and rate design.

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2004**

<b>Date</b>	<b>Case</b>	<b>Jurisdct.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
8/95	95-254-TF U-2811	AR	Tyson Foods, Inc.	Southwest Arkansas Electric Cooperative	Refund allocation.
10/95	ER95-1042 -000	FERC	Louisiana Public Service Commission	Systems Energy Resources, Inc.	Return on Equity.
11/95	I-940032	PA	Industrial Energy Consumers of Pennsylvania	State-wide - all utilities	Investigation into Electric Power Competition.
5/96	96-030-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Revenue requirements, rate of return and cost of service.
7/96	8725	MD	Maryland Industrial Group	Baltimore Gas & Electric Co., Potomac Electric Power Co. and Constellation Energy Corp.	Return on Equity.
7/96	U-21496	LA	Louisiana Public Service Commission	Central Louisiana Electric Co.	Return on equity, rate of return.
9/96	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
1/97	RP96-199- 000	FERC	The Industrial Gas Users Conference	Mississippi River Transmission Corp.	Revenue requirements, rate of return and cost of service.
3/97	96-420-U	AR	West Central Arkansas Gas Corp.	Arkansas Oklahoma Gas Corp.	Revenue requirements, rate of return, cost of service and rate design.
7/97	U-11220	MI	Association of Business Advocating Tariff Equity	Michigan Gas Co. and Southeastern Michigan Gas Co.	Transportation Balancing Provisions
7/97	R-00973944	PA	Pennsylvania American Water Large Users Group	Pennsylvania- American Water Co.	Rate of return, cost of service, revenue requirements.
3/98	8390-U	GA	Georgia Natural Gas Group and the Georgia Textile Manufacturers Assoc.	Atlanta Gas Light	Rate of return, restructuring issues, unbundling, rate design issues.

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**J. KENNEDY AND ASSOCIATES, INC.**

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2004**

<b>Date</b>	<b>Case</b>	<b>Jurisdct.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
7/98	R-00984280	PA	PG Energy, Inc.	PGE Industrial Intervenors	Cost allocation.
8/98	U-17735	LA	Louisiana Public Service Commission	Cajun Electric Power Cooperative	Revenue requirements.
10/98	97-596	ME	Maine Office of the Public Advocate	Bangor Hydro- Electric Co.	Return on equity, rate of return.
10/98	U-23327	LA	Louisiana Public Service Commission	SWEPCO, CSW and AEP	Analysis of proposed merger.
12/98	98-577	ME	Maine Office of the Public Advocate	Maine Public Service Co.	Return on equity, rate of return.
12/98	U-23358	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity, rate of return.
3/99	98-426	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Co	Return on equity.
3/99	99-082	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co.	Return on equity.
4/99	R-984554	PA	T. W. Phillips Users Group	T. W. Phillips Gas and Oil Co.	Allocation of purchased gas costs.
6/99	R-0099462	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Balancing charges.
10/99	U-24182	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Cost of debt.
10/99	R-00994782	PA	Peoples Industrial Intervenors	Peoples Natural Gas Co.	Restructuring issues.
10/99	R-00994781	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Restructuring, balancing charges, rate flexing, alternate fuel.
01/00	R-00994786	PA	UGI Industrial Intervenors	UGI Utilities, Inc.	Universal service costs, balancing, penalty charges, capacity assignment.

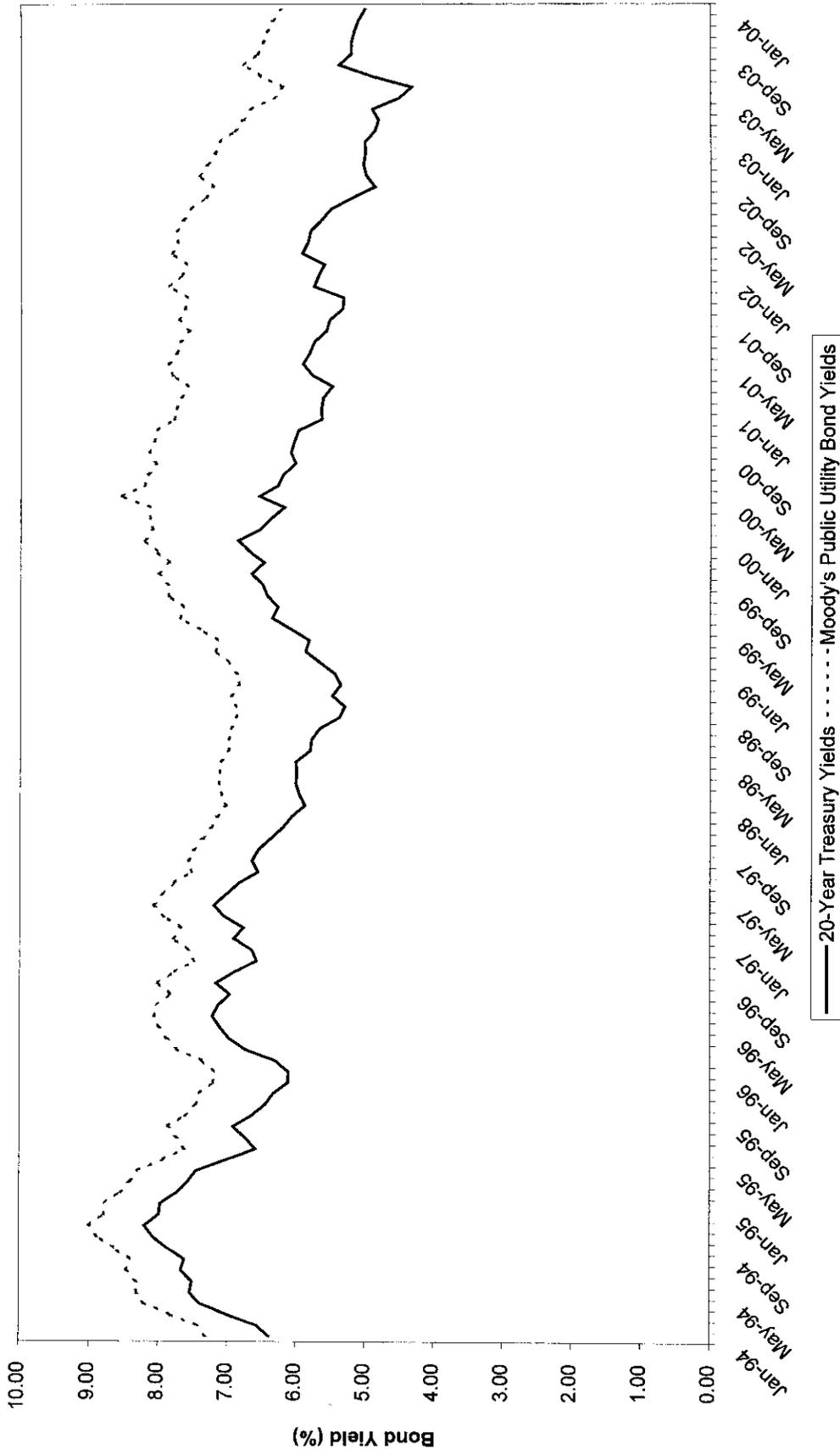
**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2004**

<b>Date</b>	<b>Case</b>	<b>Jurisdct.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
01/00	8829	MD	Maryland Industrial Gr. & United States	Baltimore Gas & Electric Co.	Revenue requirements, cost allocation, rate design.
02/00	R-00994788	PA	Penn Fuel Transportation	PFG Gas, Inc., and	Tariff charges, balancing provisions.
05/00	U-17735	LA	Louisiana Public Service Comm.	Louisiana Electric Cooperative	Rate restructuring.
07/00	2000-080	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric Co.	Cost allocation.
07/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket E)	LA	Louisiana Public Service Comm.	Southwestern Electric Power Co.	Stranded cost analysis.
09/00	R-00005654	PA	Philadelphia Industrial And Commercial Gas Users Group.	Philadelphia Gas Works	Interim relief analysis.
10/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B)	LA	Louisiana Public Service Comm.	Entergy Gulf States, Inc.	Restructuring, Business Separation Plan.
11/00	R-00005277 (Rebuttal)	PA	Penn Fuel Transportation Customers	PFG Gas, Inc. and North Penn Gas Co.	Cost allocation issues.
12/00	U-24993	LA	Louisiana Public Service Comm.	Entergy Gulf States, Inc.	Return on equity.
03/01	U-22092	LA	Louisiana Public Service Comm.	Entergy Gulf States, Inc.	Stranded cost analysis.
04/01	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B) (Addressing Contested Issues)	LA	Louisiana Public Service Comm.	Entergy Gulf States, Inc.	Restructuring issues.
04/01	R-00006042	PA	Philadelphia Industrial and Commercial Gas Users Group	Philadelphia Gas Works	Revenue requirements, cost allocation and tariff issues.
11/01	U-25687	LA	Louisiana Public Service Comm.	Entergy Gulf States, Inc.	Return on equity.

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2004**

<b>Date</b>	<b>Case</b>	<b>Jurisdic.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
03/02	14311-U	GA	Georgia Public Service Commission	Atlanta Gas Light	Capital structure.
08/02	2002-00145	KY	Kentucky Industrial Utility Customers	Columbia Gas of Kentucky	Revenue requirements.
09/02	M-00021612	PA	Philadelphia Industrial And Commercial Gas Users Group	Philadelphia Gas Works	Transportation rates, terms, and conditions.
01/03	2002-00169	KY	Kentucky Industrial Utility Customers	Kentucky Power	Return on equity.
02/03	02S-594E	CO	Cripple Creek & Victor Gold Mining Company	Aquila Networks -- WPC	Return on equity.
04/03	U-26527	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
10/03	CV020495AB	GA	The Landings Assn., Inc.	Utilities Inc. of GA	Revenue requirement & overcharge refund

### HISTORICAL BOND YIELDS AVERAGE PUBLIC UTILITY BOND VS 20-YEAR TREASURY BOND



**KENTUCKY UTILITIES  
ELECTRIC COMPANY COMPARISON GROUP  
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD**

		Sept '03	Oct '03	Nov '03	Dec '03	Jan '04	Feb '04
<b>Alliant Energy Corp.</b>	High Price (\$)	22.700	24.300	24.740	25.090	26.110	26.390
	Low Price (\$)	20.830	21.940	23.390	24.000	24.540	25.380
	Avg. Price (\$)	21.765	23.120	24.065	24.545	25.325	25.885
	Dividend (\$)	0.250	0.250	0.250	0.250	0.250	0.250
	Mo. Avg. Div.	4.59%	4.33%	4.16%	4.07%	3.95%	3.86%
	6 mos. Avg.	4.16%					
<b>Ameren Corp.</b>	High Price (\$)	43.280	44.970	45.090	46.170	48.340	48.290
	Low Price (\$)	42.110	42.920	42.550	44.050	44.910	46.000
	Avg. Price (\$)	42.695	43.945	43.820	45.110	46.625	47.145
	Dividend (\$)	0.635	0.635	0.635	0.635	0.635	0.635
	Mo. Avg. Div.	5.95%	5.78%	5.80%	5.63%	5.45%	5.39%
	6 mos. Avg.	5.67%					
<b>CH Energy Group</b>	High Price (\$)	45.930	45.390	44.800	47.000	47.150	49.200
	Low Price (\$)	43.650	42.920	42.540	43.850	45.130	45.900
	Avg. Price (\$)	44.790	44.155	43.670	45.425	46.140	47.550
	Dividend (\$)	0.540	0.540	0.540	0.540	0.540	0.540
	Mo. Avg. Div.	4.82%	4.89%	4.95%	4.76%	4.68%	4.54%
	6 mos. Avg.	4.77%					
<b>Consolidated Edison</b>	High Price (\$)	41.250	41.430	41.310	43.480	44.100	44.490
	Low Price (\$)	39.050	40.050	38.800	40.050	42.210	42.450
	Avg. Price (\$)	40.150	40.740	40.055	41.765	43.155	43.470
	Dividend (\$)	0.560	0.560	0.560	0.560	0.565	0.565
	Mo. Avg. Div.	5.58%	5.50%	5.59%	5.36%	5.24%	5.20%
	6 mos. Avg.	5.41%					
<b>DTE Energy Co.</b>	High Price (\$)	37.660	38.190	37.710	39.760	39.990	40.780
	Low Price (\$)	34.760	35.460	35.120	37.240	38.270	37.920
	Avg. Price (\$)	36.210	36.825	36.415	38.500	39.130	39.350
	Dividend (\$)	0.515	0.515	0.515	0.515	0.515	0.515
	Mo. Avg. Div.	5.69%	5.59%	5.66%	5.35%	5.26%	5.24%
	6 mos. Avg.	5.47%					
<b>Exelon Corp.</b>	High Price (\$)	63.950	65.130	65.270	66.620	67.190	67.470
	Low Price (\$)	58.900	63.300	60.950	61.500	64.360	65.090
	Avg. Price (\$)	61.425	64.215	63.110	64.060	65.775	66.280
	Dividend (\$)	0.500	0.500	0.500	0.500	0.550	0.550
	Mo. Avg. Div.	3.26%	3.11%	3.17%	3.12%	3.34%	3.32%
	6 mos. Avg.	3.22%					

**KENTUCKY UTILITIES  
ELECTRIC COMPANY COMPARISON GROUP  
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD**

		Sept '03	Oct '03	Nov '03	Dec '03	Jan '04	Feb '04
<b>MGE Energy</b>	High Price (\$)	32.860	32.730	33.000	32.850	32.200	32.300
	Low Price (\$)	29.950	30.260	31.000	30.750	31.320	30.910
	Avg. Price (\$)	31.405	31.495	32.000	31.800	31.760	31.605
	Dividend (\$)	0.338	0.338	0.338	0.338	0.338	0.338
	Mo. Avg. Div.	4.31%	4.29%	4.23%	4.25%	4.26%	4.28%
	6 mos. Avg.	4.27%					
<b>NSTAR</b>	High Price (\$)	48.340	47.990	48.590	48.960	49.980	51.200
	Low Price (\$)	44.580	45.080	46.360	47.000	48.000	48.340
	Avg. Price (\$)	46.460	46.535	47.475	47.980	48.990	49.770
	Dividend (\$)	0.540	0.540	0.540	0.555	0.555	0.555
	Mo. Avg. Div.	4.65%	4.64%	4.55%	4.63%	4.53%	4.46%
	6 mos. Avg.	4.58%					
<b>Pinnacle West</b>	High Price (\$)	36.740	36.850	39.830	40.480	40.810	39.280
	Low Price (\$)	34.180	34.910	36.210	38.590	38.070	36.900
	Avg. Price (\$)	35.460	35.880	38.020	39.535	39.440	38.090
	Dividend (\$)	0.425	0.450	0.450	0.450	0.450	0.450
	Mo. Avg. Div.	4.79%	5.02%	4.73%	4.55%	4.56%	4.73%
	6 mos. Avg.	4.73%					
<b>SCANA Corp.</b>	High Price (\$)	35.230	35.700	34.770	34.680	35.580	35.780
	Low Price (\$)	33.780	33.770	32.800	32.870	33.710	33.410
	Avg. Price (\$)	34.505	34.735	33.785	33.775	34.645	34.595
	Dividend (\$)	0.345	0.345	0.345	0.345	0.345	0.345
	Mo. Avg. Div.	4.00%	3.97%	4.08%	4.09%	3.98%	3.99%
	6 mos. Avg.	4.02%					
<b>Southern Co.</b>	High Price (\$)	29.760	30.580	30.170	30.410	30.560	30.340
	Low Price (\$)	28.120	29.060	28.550	29.100	29.110	29.050
	Avg. Price (\$)	28.940	29.820	29.360	29.755	29.835	29.695
	Dividend (\$)	0.350	0.350	0.350	0.350	0.350	0.350
	Mo. Avg. Div.	4.84%	4.69%	4.77%	4.71%	4.69%	4.71%
	6 mos. Avg.	4.74%					
<b>Vectren Corp.</b>	High Price (\$)	24.050	24.270	24.150	24.850	25.050	25.050
	Low Price (\$)	22.710	22.730	22.970	23.760	24.280	24.110
	Avg. Price (\$)	23.380	23.500	23.560	24.305	24.665	24.580
	Dividend (\$)	0.275	0.275	0.285	0.285	0.285	0.285
	Mo. Avg. Div.	4.70%	4.68%	4.84%	4.69%	4.62%	4.64%
	6 mos. Avg.	4.70%					
<b>Wisconsin Energy Corp.</b>	High Price (\$)	30.750	33.150	33.180	33.680	33.840	34.300
	Low Price (\$)	29.120	30.630	31.310	31.600	32.850	31.780
	Avg. Price (\$)	29.935	31.890	32.245	32.640	33.345	33.040
	Dividend (\$)	0.200	0.200	0.200	0.200	0.200	0.200
	Mo. Avg. Div.	2.67%	2.51%	2.48%	2.45%	2.40%	2.42%
	6 mos. Avg.	2.49%					
<b>Average Dividend Yield</b>		4.48%					

Source: Standard and Poor's Stock Guide, October 2003 through March 2004

**KENTUCKY UTILITIES  
ELECTRIC COMPANY COMPARISON GROUP  
DCF Growth Rate Analysis**

Company	(1) Value Line DPS	(2) Value Line EPS	(3) Zacks	(4) Value Line B x R
Alliant Energy Corp.	-9.71%	-1.04%	5.00%	3.13%
Ameren Corp.	0.62%	0.87%	3.00%	2.27%
CH Energy Group	0.00%	0.49%	N/A	1.82%
Consolidated Edison	0.88%	-0.04%	3.00%	2.21%
DTE Energy Co.	0.39%	5.49%	5.00%	5.31%
Exelon Corp.	6.25%	5.88%	5.00%	9.39%
MGE Energy	0.59%	5.20%	N/A	4.64%
NSTAR	2.78%	3.00%	4.00%	4.88%
Pinnacle West	5.50%	1.09%	5.00%	3.55%
SCANA Corp.	5.22%	5.60%	4.00%	5.43%
Southern Co.	3.36%	5.18%	5.00%	4.63%
Vectren Corp.	3.49%	7.31%	6.00%	4.38%
Wisconsin Energy Corp.	4.56%	7.86%	7.00%	6.36%
Averages Excluding Negative Values	2.80%	4.36%	4.73%	4.46%

**Sources:** Zacks Detailed Analysts' Estimates, March 2004  
Value Line Investment Survey, January 2, February 13, and March 5, 2004

**Value Line Projected Dividend Per Share Growth**

Company	2002/ 2003 DPS	Projected DPS	Compound Growth Rate
Alliant Energy Corp.	\$ 2.00	\$ 1.20	-9.71%
Ameren Corp.	\$ 2.54	\$ 2.62	0.62%
CH Energy Group	\$ 2.16	\$ 2.16	0.00%
Consolidated Edison	\$ 2.24	\$ 2.34	0.88%
DTE Energy Co.	\$ 2.06	\$ 2.10	0.39%
Exelon Corp.	\$ 1.92	\$ 2.60	6.25%
MGE Energy	\$ 1.34	\$ 1.38	0.59%
NSTAR	\$ 2.18	\$ 2.50	2.78%
Pinnacle West	\$ 1.63	\$ 2.13	5.50%
SCANA Corp.	\$ 1.38	\$ 1.78	5.22%
Southern Co.	\$ 1.39	\$ 1.64	3.36%
Vectren Corp.	\$ 1.07	\$ 1.27	3.49%
Wisconsin Energy Corp.	\$ 0.80	\$ 1.00	4.56%
Average			1.84%

**KENTUCKY UTILITIES  
COMPARISON GROUP  
DCF Growth Rate Analysis**

**Value Line Projected Earnings Per Share Growth**

Company	3-Year Avg. EPS	Projected EPS	Compound Growth Rate
Alliant Energy Corp.	\$ 2.02	\$ 1.90	-1.04%
Ameren Corp.	\$ 3.13	\$ 3.30	0.87%
CH Energy Group	\$ 2.67	\$ 2.75	0.49%
Consolidated Edison	\$ 3.06	\$ 3.05	-0.04%
DTE Energy Co.	\$ 3.08	\$ 4.25	5.49%
Exelon Corp.	\$ 4.68	\$ 6.60	5.88%
MGE Energy	\$ 1.66	\$ 2.25	5.20%
NSTAR	\$ 3.35	\$ 4.00	3.00%
Pinnacle West	\$ 3.19	\$ 3.40	1.09%
SCANA Corp.	\$ 2.34	\$ 3.25	5.60%
Southern Co.	\$ 1.81	\$ 2.45	5.18%
Vectren Corp.	\$ 1.31	\$ 2.00	7.31%
Wisconsin Energy Corp.	\$ 1.75	\$ 2.75	7.86%
<u>Average</u>			3.61%

**Sustainable Growth Calculation**

Company	Forecasted Payout Ratio	Forecasted Retention Ratio	Expected Return	Growth Rate
Alliant Energy Corp.	63.16%	36.84%	8.50%	3.13%
Ameren Corp.	79.39%	20.61%	11.00%	2.27%
CH Energy Group	78.55%	21.45%	8.50%	1.82%
Consolidated Edison	76.72%	23.28%	9.50%	2.21%
DTE Energy Co.	49.41%	50.59%	10.50%	5.31%
Exelon Corp.	39.39%	60.61%	15.50%	9.39%
MGE Energy	61.33%	38.67%	12.00%	4.64%
NSTAR	62.50%	37.50%	13.00%	4.88%
Pinnacle West	62.65%	37.35%	9.50%	3.55%
SCANA Corp.	54.77%	45.23%	12.00%	5.43%
Southern Co.	66.94%	33.06%	14.00%	4.63%
Vectren Corp.	63.50%	36.50%	12.00%	4.38%
Wisconsin Energy Corp.	36.36%	63.64%	10.00%	6.36%
Average	61.13%	38.87%	11.23%	4.46%

**RETURN ON EQUITY CALCULATION  
ELECTRIC COMPANY COMPARISON GROUP**

	(1) Value Line <u>Dividend Gr.</u>	(2) Value Line <u>Earnings Gr.</u>	(3) Zack's <u>Earning Gr.</u>	(4) Retention <u>Earning Gr.</u>	(5) Average of <u>All Gr. Rates</u>
Dividend Yield	4.48%	4.48%	4.48%	4.48%	4.48%
Growth Rate	2.80%	4.36%	4.73%	4.46%	4.09%
Expected Div. Yield	<u>4.54%</u>	<u>4.58%</u>	<u>4.58%</u>	<u>4.58%</u>	<u>4.57%</u>
DCF Return on Equity	7.34%	8.94%	9.31%	9.04%	8.66%

**KENTUCKY UTILITIES  
Capital Asset Pricing Model Analysis  
Electric Company Comparison Group**

**20-Year Treasury Bond**

Line No.		<u>Value Line</u>
1	Market Required Return Estimate	
2	Expected Dividend Yield	1.21%
3	Expected Growth	<u>9.91%</u>
4	Required Return	11.12%
5	Risk-free Rate of Return, 20-Year Treasury Bond	
6	Average of Last Six Months	5.11%
8	Risk Premium	
9	@ 6 Month Average RFR (Line 4 minus Line 6)	6.01%
10	Comparison Group Beta	0.68
11	Comparison Group Beta * Risk Premium	
12	@ 6 Month Average RFR (Line 10 * Line 9)	4.09%
13	CAPM Return on Equity	
14	@ 6 Month Average RFR (Line 12 plus Line 6)	9.20%

**5-Year Treasury Bond**

1	Market Required Return Estimate	
2	Expected Dividend Yield	1.21%
3	Expected Growth	<u>9.91%</u>
4	Required Return	11.12%
5	Risk-free Rate of Return, 5-Year Treasury Bond	
6	Average of Last Six Months	3.19%
8	Risk Premium	
9	@ 6 Month Average RFR (Line 4 minus Line 6)	7.93%
10	Comparison Group Beta	0.68
11	Comparison Group Beta * Risk Premium	
12	@ 6 Month Average RFR (Line 9 * Line 10)	5.40%
13	CAPM Return on Equity	
14	@ 6 Month Average RFR (Line 12 plus Line 6)	8.59%

**KENTUCKY UTILITIES**  
**Capital Asset Pricing Model Analysis**  
**Electric Company Comparison Group**

**Supporting Data for CAPM Analyses**

20 Year Treasury Bond Data

	<u>Avg. Yield</u>
September-03	5.21%
October-03	5.21%
November-03	5.17%
December-03	5.11%
January-04	5.01%
February-04	<u>4.94%</u>
6 month average	5.11%

5 Year Treasury Bond Data

	<u>Avg. Yield</u>
September-03	3.18%
October-03	3.19%
November-03	3.29%
December-03	3.27%
January-04	3.12%
February-04	<u>3.07%</u>
6 month average	3.19%

Value Screen III Growth Rate Data:

Forecasted Data:	
Earnings	14.03%
Book Value	9.03%
Dividends	<u>6.68%</u>
Average	9.91%
Source: Value Line Investment Survey for Windows, Feb-04	

Value Line Betas  
Comparison Group:

Alliant Energy Corp.	0.75
Ameren Corp.	0.70
CH Energy Group	0.75
Consolidated Edison	0.60
DTE Energy Co.	0.65
Exelon Corp.	0.70
MGE Energy	0.55
NSTAR	0.70
Pinnacle West	0.80
SCANA Corp.	0.65
Southern Co.	0.60
Vectren Corp.	0.75
Wisconsin Energy Corp.	<u>0.65</u>
Average	0.68

Source: Value Line Investment Reports,  
January 2, February 13, and March 5, 2004

**KENTUCKY UTILITIES**  
**Capital Asset Pricing Model Analysis**

**Historic Market Premium**

	<u>Geometric Mean</u>	<u>Arithmetic Mean</u>
Long-Term Annual Return on Stocks	10.20%	12.20%
Long-Term Annual Income Return on Long-Term Government Bond:	<u>5.20%</u>	<u>5.20%</u>
Historical Market Risk Premium	5.00%	7.00%
Electric Group Beta	<u>0.68</u>	<u>0.68</u>
Beta * Market Premium	3.40%	4.77%
Current 20-Year Treasury Bond Yield	<u>5.11%</u>	<u>5.11%</u>
CAPM Cost of Equity	8.51%	9.87%

**REVISED TWO-STAGE DCF CALCULATION  
ROSENBERG ELECTRIC COMPARISON GROUP  
Forecasted Long-Term Nominal GDP Growth**

Company	(1) 6-Mo. Avg. Price	(2) Annual Dividend	(3) 5-Year Value Line Dividend Gr.	(4) Long-term GDP Growth	(5) DCF Cost of Equity
Ameren Corp.	\$ 44.89	\$ 2.54	0.62%	5.91%	10.65%
CH Energy Group	\$ 45.29	\$ 2.16	0.00%	5.91%	9.78%
Consolidated Edison	\$ 41.56	\$ 2.26	0.88%	5.91%	10.52%
DTE Energy Co.	\$ 37.74	\$ 2.06	0.39%	5.91%	10.43%
Exelon Corp.	\$ 64.14	\$ 2.20	6.25%	5.91%	9.59%
MGE Energy	\$ 31.68	\$ 1.35	0.59%	5.91%	9.46%
NSTAR	\$ 47.87	\$ 2.22	2.78%	5.91%	10.19%
Pinnacle West	\$ 37.74	\$ 1.80	5.50%	5.91%	10.87%
SCANA Corp.	\$ 34.34	\$ 1.38	5.22%	5.91%	10.04%
Southern Co.	\$ 29.57	\$ 1.40	3.36%	5.91%	10.39%
Vectren Corp.	\$ 24.00	\$ 1.14	3.49%	5.91%	10.43%
Wisconsin Energy Corp.	\$ 32.18	\$ 0.80	4.56%	5.91%	8.36%
 Average					 10.06%

**REVISED TWO-STAGE DCF CALCULATION  
ROSENBERG ELECTRIC COMPARISON GROUP  
Value Line Forecasted Retention Growth**

Company	(1) 6-Mo. Avg. Price	(2) Annual Dividend	(3) 5-Year Value Line Dividend Gr.	(4) Projected Sustainable Growth	(5) DCF Cost of Equity
Ameren Corp.	\$ 44.89	\$ 2.54	0.62%	3.13%	8.35%
CH Energy Group	\$ 45.29	\$ 2.16	0.00%	2.27%	6.67%
Consolidated Edison	\$ 41.56	\$ 2.26	0.88%	1.82%	7.13%
DTE Energy Co.	\$ 37.74	\$ 2.06	0.39%	2.21%	7.35%
Exelon Corp.	\$ 64.14	\$ 2.20	6.25%	5.31%	9.07%
MGE Energy	\$ 31.68	\$ 1.35	0.59%	9.39%	12.53%
NSTAR	\$ 47.87	\$ 2.22	2.78%	4.64%	9.11%
Pinnacle West	\$ 37.74	\$ 1.80	5.50%	4.88%	10.01%
SCANA Corp.	\$ 34.34	\$ 1.38	5.22%	3.55%	8.03%
Southern Co.	\$ 29.57	\$ 1.40	3.36%	5.43%	9.99%
Vectren Corp.	\$ 24.00	\$ 1.14	3.49%	4.63%	9.35%
Wisconsin Energy Corp.	\$ 32.18	\$ 0.80	4.56%	4.38%	6.98%
Average					8.71%

**REVISED TWO-STAGE DCF CALCULATION  
ROSENBERG ELECTRIC COMPARISON GROUP  
Industry Projected Growth**

Company	(1) 6-Mo. Avg. Price	(2) Annual Dividend	(3) 5-Year Value Line Dividend Gr.	(4) Industry Projected Growth	(5) DCF Cost of Equity
Ameren Corp.	\$ 44.89	\$ 2.54	0.62%	5.30%	10.14%
CH Energy Group	\$ 45.29	\$ 2.16	0.00%	5.30%	9.25%
Consolidated Edison	\$ 41.56	\$ 2.26	0.88%	5.30%	10.01%
DTE Energy Co.	\$ 37.74	\$ 2.06	0.39%	5.30%	9.92%
Exelon Corp.	\$ 64.14	\$ 2.20	6.25%	5.30%	9.06%
MGE Energy	\$ 31.68	\$ 1.35	0.59%	5.30%	8.93%
NSTAR	\$ 47.87	\$ 2.22	2.78%	5.30%	9.67%
Pinnacle West	\$ 37.74	\$ 1.80	5.50%	5.30%	10.37%
SCANA Corp.	\$ 34.34	\$ 1.38	5.22%	5.30%	9.52%
Southern Co.	\$ 29.57	\$ 1.40	3.36%	5.30%	9.88%
Vectren Corp.	\$ 24.00	\$ 1.14	3.49%	5.30%	9.92%
Wisconsin Energy Corp.	\$ 32.18	\$ 0.80	4.56%	5.30%	7.81%
Average					9.54%